

Abstract of the Disclosure

The present invention relates to a method for encoding an audio signal. In a first embodiment a model relating to temporal masking of sound provided to a human ear is provided. A temporal masking index is determined in dependence upon a received audio signal and the model using a forward and a backward masking function. Using a psychoacoustic model a masking threshold is determined in dependence upon the temporal masking index. Finally, the audio signal is encoded in dependence upon the masking threshold. The method has been implemented using the MPEG-1 psychoacoustic model 2. Semiformal listening test showed that using the method for encoding an audio signal according to the present invention the subjective high quality of the decoded compressed sounds has been maintained while the bit rate was reduced by approximately 10%. In a second embodiment, the inharmonic structure of audio signals is modeled and incorporated into the MPEG-1 psychoacoustic model 2. In the model, the relationship between the spectral components of the input audio signal is considered and an inharmonicity index is defined and incorporated into the MPEG-1 psychoacoustic model 2. Informal listening tests have shown that the bit rate required for transparent coding of inharmonic (multi-tonal) audio material can be reduced by 10% if the modified psychoacoustic model 2 is used in the MPEG 1 Layer II encoder.